

FREE PUBLIC LIBRARY  
JACKSONVILLE, FLORIDA

# The Citrus Industry

FLORIDA'S EXCLUSIVE  
CITRUS MAGAZINE . . .

Vol. 21 — No. 4

APRIL, 1940

15 Cents A Copy

Every Grower In Florida

will be interested

in the

Fifty-Third Annual Meeting

of the

Florida State Horticultural Society

In Tampa

April 2, 3 and 4

— ALSO —

THE MEETING OF SOIL SCIENCE SOCIETY OF FLORIDA  
THE EIGHTH MEETING KROME MEMORIAL INSTITUTE  
THE FIFTEENTH ANNUAL MEETING FLORIDA ROSE SOCIETY  
THE SECOND ANNUAL MEETING OF VEGETABLE DIVISION

MAKE YOUR PLANS TO ATTEND

PUBLIC LIBRARY

# Francis P. Whitehair

*. . . a Citrus Grower For Governor*

"When I am your governor the citrus industry will have a man who is and always has been an independent citrus grower."

That is the manner in which Francis P. Whitehair, the 39-year old DeLand citrus farmer, business man and attorney, assures the citrus growers of Florida that their interests are his interests.

And true it is, for Mr. Whitehair has a sizeable stake in the soil of Florida, a stake he once hoped might make him independently wealthy. But of course he has been fortunate to make operating expenses for the past several seasons, along with the rest of us.

Francis Whitehair started in the citrus industry as soon as he was able to scrape together a few dollars and some credit. And he's been in the business ever since.

He's a farmer, naturally, for he was born on a farm.

When his family moved to Winter Haven in 1910, Francis, a 10-year old boy, soon found odd jobs on neighbors' farms. Still a youngster, he obtained a job on a dairy farm. He arose at 4:30 every morning to work as a handy man and deliver milk.

He worked his way thru the Polk County public schools at Winter Haven and Stetson University at DeLand.

After passing a 3-year law course in two years, he was admitted to the Florida Bar at the age of 20. One year later, on his 21st birthday, he joined the prominent DeLand law firm of Landis, Fish and Hull as a law clerk.

It wasn't many years later that young Whitehair bought himself his first citrus grove. And he's been in the citrus game ever since, now owning about 300 acres in citrus, producing approximately 50,000 boxes a year.

Whitehair is a practical citrus man. He doesn't claim to be the sole depository of all the wisdom on citrus culture or production. He prides himself on producing quality crops.

In his first citrus speech of the current campaign Mr. Whitehair made his views on the industry crystal clear.

"Florida will not grow as it should until there is a profit for the growers from citrus," he said.

And he promised there would be no political interference with citrus growers when he is governor.

"I will see to it that the growers have the right of self-determination," he said.

"I still have faith in citrus despite the deplorable condition of the industry today. The business must be cleaned from within, however.

"Individually, citrus leaders are good business men. But collectively they have been unwilling to show faith or confidence in each other. As a consequence our program and

and our laws are programs and laws of compromise. This industry's problems cannot be solved with compromises."

Mr. Whitehair told the industry he realized the governor was unable to assume the constitutional prerogatives of the legislature.

"Of course, however, the State and the Governor can be a help to the industry thru leadership and friendly cooperation.

"The State should see to it that research work on soils, citrus culture and other phases of science are fostered and carried on to the full extent of its financial ability. The rich field of by-products which could open vast new markets for us should be constantly and carefully studied."

Mr. Whitehair's citrus views are sound.

He knows the seriousness of the growers' problems.

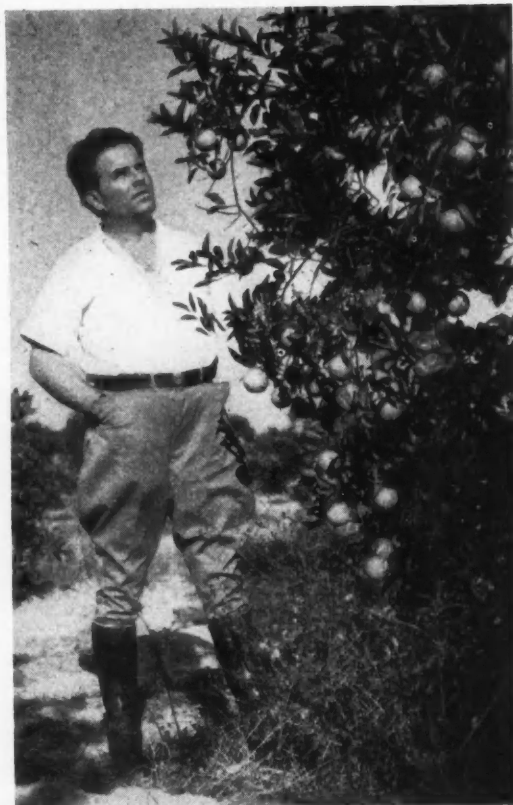
He realizes the need for a solution but on the other hand he recognizes the limitations of the office of governor set by Florida's constitution and doesn't try to lure the support of Florida's citrus growers or any other organization with extravagant promises.

A citrus grower, a fine business man, and a capable and successful attorney, he is a man the citrus growers of Florida can depend upon to fight for them, think with them and work for them.

"The great citrus industry must make up its collective mind that good fruit cannot be made in a packing house," he says, "We must give our customers what we say we are going to give them. We must concentrate on honesty and dependability."

Those two qualities have been the keynote to Mr. Whitehair's personal success.

"When I am governor, rest assured the problems of the citrus growers will always be close to my heart," he assures.



## Citrus Field Box Law Will Be Enforced

Persons who violate the citrus field box law are subject to criminal prosecution, the Florida citrus commission emphasizes in a bulletin issued recently.

The commission also is inviting persons who have knowledge of violations of the law to furnish it with whatever evidence they have, and it will be turned over to Nathan Mayo, commissioner of agriculture, for action in connection with revocation or suspension of the license of the suspected individual.

John W. Bull, attorney for the commission, has advised the citrus board that it has no power to prosecute such violations, although it can serve as a confidential clearing house for information concerning alleged violations, turning such evidence over to Mr. Mayo for actual prosecution. Persons who have such information also have the right to submit it to the prosecuting attorney of their district, who is charged by law with handling it the same as he would any other criminal case.

The field box law establishes standards for containers which are used in the purchase, sale or handling of fruit for or from growers. There are three ways in which the law can be violated, it was pointed out. One would be to construct a box which did not comply with the legal measurements. Another would be to use a crate more than one and one-quarter inch in height. The third would be to fail to mark the box "oversize" in proper letters if it exceeds 4900 cubic inches capacity.

It would be illegal, the commission attorney said, for a manufacturer to construct a field box which did not meet the specifications established by law, even though it was the manufacturer's intention to make the box slightly larger to allow for contraction. The provision permitting a tolerance of 100 cubic inches is solely to allow for expansion of boxes, it was pointed out, but there is no provision to allow for contraction.

There is ample legal authority to prosecute violators of the field box law, it was pointed out, but difficulty has been experienced in getting persons to furnish competent information on which prosecutions could be based. Under the recently expressed policy of the citrus commission, it is willing to serve as a central point to receive confidentially any complaints of violation and to turn them over to Commissioner Mayo for actual prosecution.

## Get the right answer NOW!

**W**hat sort of fertilization program will be best for **YOUR** grove this summer? What special care is needed to offset as well as possible any damage from weather shock?

You can get the right answer by calling in the **GULF Field Representative** in your section to make recommendations to fit **YOUR** grove's needs.

This is a time when **GULF Field Service** pays you extra dividends. The **GULF Field Representative** near you knows local conditions. The picture of the citrus industry as a whole shows so many variations no one plan for proper care can possibly fit today's situation.

So employ the combination that has proved profitable to growers year in and year out — **GULF Quality Fertilizers** and **GULF Field Service . . .** and you'll have the right answer to your grove's particular needs. You'll save money in the long run, too!

For Everything that  
Grows in Florida . . . use



**GULF** *Brands of*  
**FERTILIZER**  
**THE GULF FERTILIZER CO.**

Tampa and Port Everglades, Florida





# Spessard L. Holland As Governor Will Aid Florida's Citrus Growers

—For 8 Years in the State Senate He Has Worked and Fought for the Growers of This State — As Your Governor He Can Give You Even More Help . . . .

## WHY ANY REASON FOR CITRUS LEGISLATION?

(1) In 1924-25 Citrus production figures were:

Florida—Oranges,  
9,308,520 boxes;  
—Grapefruit,  
7,665,480 boxes.

California—Oranges,  
15,964,477 boxes.

Texas—Grapefruit,  
211,000 boxes.

(2) In 1938-39 Citrus production figures were:

Florida—Oranges,  
30,500,000 boxes;  
—Grapefruit  
23,700,000 boxes.

California—Oranges,  
41,500,000 boxes.

Texas—Grapefruit,  
15,670,000 boxes.

(3) Increased production of competing fruits and juices.

These problems demanded solution by:

—Expanding old markets.

—Developing new markets.

—Inspection to maintain satisfactory grade and maturity standards for Florida fruit to satisfy consumers and to meet competition.

—Study of grove problems so that growers may produce good fruit at minimum cost.

—Practical working out of handling and processing so that fruit may reach the market at lowest cost and in best condition.

—Develop additional uses for our fruit, such as by-product innovations.

—Equal opportunity for everyone for small, inexpensive, washing, packing and shipping plants, be they independent, individual or cooperative.

—Maintenance of frost warning service and many other essential and fair items.



## SPESSARD HOLLAND HAS PROVED HIS INTEREST

—Holland has always supported these things and many others for the good of the growers and citrus industry of Florida.

—Holland was raised in Florida's citrus section and is personally interested as a small grower, owning less than 40 acres of citrus groves, so that he knows from personal experience the problems of small growers who sell their fruit on the trees or are members of cooperatives.

—Holland's belief that the ability of many growers to continue to own and operate their groves depends upon sound, honest, efficient, progressive and non-political handling of grower and industry problems.

—Every knows that differences of opinion have existed and still exist among growers as to what is the best thing to do.

—The growers of Florida know that Holland has always carefully considered the ideas and views of individuals and groups of growers in taking his stand on all matters coming before the legislature during his 8 years as State Senator.

—Holland has pledged in every public speech of his present campaign that personal and factional politics will be kept out of citrus industry affairs when he is governor.

Holland Says: "The thing all of us growers are interested in is making a living or a profit out of our groves. This means producing the most good fruit we can at the least expense per box. Sending only good fruit to market and getting it there in the best possible condition at the lowest possible cost. We need as many customers and as many markets as possible. We must all work together to accomplish these things."

Your vote for Holland will be a vote for yourself — the Citrus Industry needs a proven friend as their governor—Spessard L. Holland Is That Man!

(This Ad Paid For By Small Citrus Grower Friends Of Spessard L. Holland)





Publication office at Bartow, Florida. Entered as second class matter February 16th, 1920, at the post office at Tampa, Florida, under the act of March 3, 1879. Entered as second class matter June 19, 1935, at the post office at Bartow Florida, under act of March 3, 1879.

# State Horticultural Society To Meet In Tampa, April 2, 3, 4

## PROGRAM

53rd Annual Meeting — Tampa Terrace Hotel

### Opening Session

Tuesday, April 2, 1940 - 8:00 P. M.

Invocation — Rev. John Walthour, Rector, St. Andrews Episcopal Church, Tampa, Fla.

Address of Welcome — R. E. L. Chancey, Mayor, Tampa, Fla.

Response to Address of Welcome — Marvin H. Walker, Lakeland.

President's Annual Address, C. I. Brooks, Miami.

Address — "Federal Crop Insurance," Cecil A. Johnson, U. S. D. A., Washington, D. C.

Address — "Citrus Credits In Florida," G. B. Aycrigg, Winter Haven.

Memorial Service.

Business Session.

Wednesday, April 3, 1940 - 9:30 A. M.

Address — "Soil Reaction Tendencies in Sandy Citrus Soils," W. L. Tait, Winter Haven.

Address — "The Benefits Coming From the Use of Scientific Facts in Citrus Culture," H. A. Thullberry, Lake Wales.

Address — "Progress Report on Sources of Potash for Citrus," G. M. Bahrt and W. R. Roy, U. S. D. A., Orlando.

Address — "The Effect of Various Fertilizers Upon the Vitamin C Content of Citrus Juices," W. R. Roy and G. M. Bahrt, U. S. D. A., Orlando.

Address — "Some Effects of Soils and Fertilizers on Fruit Composition," B. R. Fudge and B. Fehmerling, Citrus Experiment Station, Lake Alfred.

Question Box.

Wednesday, April 3, 1940 - 2:00 P. M.

Address — "Peaches as a Potential Crop in South Florida," G. H. Blackmon, Gainesville and Robt. P. Thornton, Tampa.

Address — "The A. A. A. Program for Citrus for 1940," H. G. Clayton, Gainesville.

Address — "Thrips Injury on Oranges and Grapefruit in Florida," W. L. Thompson, Lake Alfred.

Address — "The Status of the Melanose Fungus in Cold Injured Citrus Wood," R. H. Voorhees, Citrus Experiment Station, Lake Alfred.

Address — "The Status of Citrus Pests Following the Recent Cold," Ralph L. Miller, Orlando, and W. L. Thompson, Lake Alfred.

Wednesday, April 3, 1940 - 7:00 P. M.

### BANQUET

Palm Room, Tampa Terrace Hotel

Hon. Doyle E. Carlton, Toastmaster

Conferring of Honorary Memberships, Dr. H. Harold Hume, Gainesville.

Thursday, April 4, 1940 - 9:30 A. M.

Address — "Seasonal Changes in the Principal Varieties of Florida Oranges," Dr. Paul L. Harding, B. P. I., U. S. D. A., Orlando.

Address — "Our Changing Agriculture," Dr. Wilmon Newell, Gainesville.

Address — "What Constitutes Quality in Florida Citrus Fruits," - A Symposium - W. L'E. Barnett, Tangerine.

1. From Nutritional Standpoint.

2. From Chemical Standpoint.

3. From the Consumer and Trade Standards.

4. From the Legal Standpoint as represented in Specifications and Court Decisions.

Address — "Problems In Producing an Orange of Good Quality and In Selling It On Its Merits," E. F. DeBusk, Gainesville.

Thursday, April 4, 1940 - 2:00 P. M.

Address — "Fruit Injury During the Recent Cold Period," George E. Copeland, Citrus Inspection Bureau, Winter Haven.

Address — "Facts and Fancies about Florida Freezes," Eckley S. Ellison, U. S. D. A., Weather Bureau, Lakeland.

Address — "Preliminary Report on Varieties, Fertilizers and other Factors as Influencing Cold Resistance in Citrus," Dr. A. F. Camp and W. W. Lawless, Lake Alfred.

Address — "The Protection of Groves against Cold by Firing," - A Symposium - W. A. Varn, Lake Wales; J. K. Stuart, Bartow; W. F. Ward, Brooksville; Howard Phillips, Orlando; W. J. Crosby, Citra.

Business Session.

Thursday, April 4, 1940 - 8:00 P. M.

Address — "A Diagnosis of Certain Growing Pains Evident in the Citrus Industry," S. R. Smith, A. A. A. U. S. D. A., Washington, D. C.

Address — "The Position of the Grower of Small Acreage in the Citrus Industry," E. L. Wirt, Babson Park.

Business Session.

(Continued on page 9)

# How Soil Chemistry Has Helped The Florida Grower

R. V. ALLISON, Head  
Department Chemistry and Soils  
Florida Experiment Station

In 1932 President John J. Tigert appointed a committee of the faculty to appraise the research work of the University of Florida. This was deemed advisable not only to study the part it has played in the development of a sound economic structure for the state, but also to provide a basis for planning "the most efficient application of effort in the future." The summary of the work of this committee was published in the University Record for October 1-15, 1932, under the title, "Twenty Five Million Dollars Annually from Research."

Mention is made of this fine piece of work at this time only because there is a statement in the foreword of the publication that can be most fittingly used as a background for this review of how soil chemistry has helped Florida growers. I shall take the liberty of quoting the paragraph in full, following, as it does, a leading discussion of the difficulty of evaluating the benefits of research.

"Who can place a value upon the discovery that the application of copper to the soil would make the growing of crops on Everglades lands possible, where without it agricultural crops could not be grown? Without these happy results from research the State's efforts and the efforts of private individuals in that area would have come to nought; with it, the potential agricultural wealth of the Everglades, a vast resource, can be developed. The results of this single piece of research work will return to the State all money spent or that will ever be spent on research."

## Work With the Trace Elements

Copper has indeed served the agriculture of the Everglades well, as have also the elements, manganese and zinc. The deficiency or inavailability of the latter two elements under certain conditions in the Everglades was discovered contemporaneously with the absolute need for copper in stimulating plant growth on the typical, raw, sawgrass peat of that area. Although normal plant growth has been substituted for complete failure through the use of one or more of these trace elements, and the phenomenal yields of a wide variety of agricultural plants under Everglades conditions is becoming

well known to most Floridians, the agricultural future of the area is really bound up in a very definite way with the development of a sound program of soil and water conservation for the entire Everglades region.

Copper deficiency also has been fully demonstrated as the fundamental cause of "dieback" in citrus. Manganese deficiency on many acid, sandy soils, and its inavailability on high lime or marl soils also is known to affect a wide variety of plants, including truck crops, tree crops, and ornamentals. Zinc has been found to be a specific for "white-bud" of corn, "bronzing" of the foliage of tung trees, "french" or "mottle-leaf" of citrus, and the abnormal development of the foliage of pecans and peaches under certain conditions. Published information now in press and other work under way will show the distribution of these trace elements, as well as the more common elements in Florida soils and plants, and doubtless serve as a basis for much important work in this field in the future in relation to normal growth of plants and nutrition of animals and men.

## Work With the Common Elements

Strangely enough we know less about the plant characteristics or symptoms that accompany deficiencies of the common elements, including phosphorus and potassium, than we do of the trace or micro elements. With respect to nitrogen, we know, of course, that the cheapest of all sources is that made available from the atmosphere through the activity of nitrogen fixing organisms either as they are associated with the roots of leguminous plants or free-living in the soil body itself. The source of nitrogen used in the fertilizer mixture is an important factor not only as to cost but also in balancing the reaction of the mixture and, consequently, in determining the effect of a material or of a mixture on the reaction of the soil if it is not properly balanced. One of the most common questions asked in regard to nitrogen sources is concerning the indispensability of natural organics and the proportion of the whole that is necessary from this source. Recent studies and others in progress have indicated and are indicating

that the natural organics may be replaced, at least in part, by soluble sources including synthetic organic types such as urea. Such substitution should be made with care, however, and judicious attention given as at all other times to maintenance of as nearly optimum soil reaction as possible, (approximately pH 6.2 to 6.5 for most agricultural plants) and a maximum organic matter content by cover cropping or other means.

Principal questions raised in connection with phosphorus nutrition of Florida crops pertain to the extent phosphorus applied in soluble form in the fertilizer mixture accumulates in our various soils, its continued availability, if it accumulates, and finally, the possible value of our insoluble phosphates such as finely ground phosphate rock, and colloidal phosphate from waste ponds. Considerable accumulation of phosphorus under most soil conditions where generous applications are made annually in the fertilizer mixture has been fairly well demonstrated. There is also little question as to its availability, with the possible exception of certain rapidly growing truck crops. Extent of this accumulation on various soils and availability of such naturally "reverted" materials for plant growth are principal objectives in current studies. These studies, in cooperation with the Experiment Station's Department of Agronomy, are showing rather surprising results under pasture conditions. If such low-cost sources of phosphorus are found satisfactory for this purpose, it is evident that the cost of establishing pastures in Florida will be materially reduced. Furthermore, as phosphatic materials are generously applied to our pastures, the content of the forage in this element will be proportionately larger and the feed value increased.

With the cutting off of foreign sources of sulfate of potash, much interest has been manifested recently in the fact that very few crops in Florida, other than tobacco, have a marked preference or need for the sulfate form over the muriate. Even in the case of tobacco, a certain proportion of the muriate form is used in most complete mixtures.

## Soil Reaction

As already indicated in connection

with the availability of the trace elements, the acidity or alkalinity of a soil plays an important part in the nutrition of many plants over and above their content of calcium and magnesium, which elements are not only vital plant nutrients, but in carbonate form are also important reaction determinants. A too acid condition, especially in our open sandy soils, is conducive to loss of practically all plant food elements, especially copper, manganese and zinc. On the other hand, the presence of too much lime tends to convert them into insoluble forms in the soil, thus emphasizing the advantage, under such conditions, of applying needed elements of this type in the form of sprays to the foliage. The importance of maintaining the reaction of the soil at an optimum balance for the plants involved is gaining rapid recognition because of the assurance it gives of adequate supplies of calcium and magnesium and also for the added stability it gives the absorption or buffer complex of the soil to retain greater quantities of other elements in a condition from which they are readily available to plants. Farm growers, to mention one of several groups interested in intensive conditions of culture, are becoming especially conscious of this relationship.

#### Organic Matter

Due to our high annual rainfall and temperature the problem of maintaining the organic matter content of Florida soils is usually regarded as a very difficult one, especially under conditions of continuous cultivation. The value of this material as a source of energy for the microflora of the soil and the high degree of physical activity which it shows when well decomposed, from the standpoint of absorbing and retaining plant nutrients in the soil, makes turning under of green manures and other sources of organic matter one of the most important individual practices on Florida farms. Although the new accumulation may not be appreciable, the dynamic changes which heavy charges of organic matter induce in the soil are very well worthwhile. After all we do not purchase bread and other food-stuffs with the idea of taking them home and saving them indefinitely!

#### Soil Conservation

Much could be said regarding the relationship of physical and chemical values in the soil to essential soil conservation programs. If by soil conservation we mean the maintenance of the crop producing power of a given soil on a truly satisfactory level, then the reaction of the soil,

its fertility level, and all other factors affecting the growth of the plants on it, in one way or another, must enter into the picture. Under the influence of a high annual rainfall here in Florida, it is readily apparent that much of the problem of soil deterioration in our open sandy types is internal, being in the nature

of a leaching process in which the rapid infiltration and downward movement of water carries with it not only dissolved materials, but finely divided solids as well. Such factors and many others must be taken into consideration in developing effective soil conservation plans for the future.

## Root-Knot Nematodes . . . And How They Work

By J. R. WATSON, Entomologist, Florida Experiment Station

The organism which causes root-knot is a worm belonging to the class known as round worms or nematodes, sometimes called "nemas" for short. The name round worm is a little confusing as these worms are not at all closely related to such worms as the angleworm, a favorite of fishermen, which also is round in cross-section. However, the angleworms have a body divided into segments, which is not true of nematodes. Neither are these nematodes at all related to caterpillars and the young beetles which are often spoken of as worms. Nematodes are true worms, that is to say, the adults are worms and they never develop into insects of any kind.

There are thousands of different kinds of nematodes, probably tens of thousands. They occur in abundance in the soil, water and other liquids. For instance, the little wriggling things one can find in mother of vinegar are nematodes. Some of those living in the soil are predaceous, provided with powerful teeth, and are fearful looking animals when viewed under a microscope. Many feed on the root-knot nematodes. Some of them are parasites of animals, including man, such as the hookworm. Many, like the root-knot nematode which goes under the scientific name of *Heterodera marioni*, are parasites of plants.

From the egg of the root-knot nematodes there hatches out a small, corkscrew-like worm, practically invisible to the naked eye because of its size. This worm swims through damp soil in the manner of an eel through water. The males are free living and retain this corkscrew-like shape throughout life, but the females burrow into the roots of susceptible plants, usually just below the epidermis, although in some roots that have much air in them they may burrow deep into the root. As the result of their feeding and a poison

which they give off, the plant forms a large gall, something analogous perhaps to tumors or cancers in man. These galls begin to form very promptly. In the laboratory we have seen them within 3 days after the nematodes were introduced.

Once embedded in the tissue, the female grows, particularly in thickness, until she is pear-shaped and large enough to be plainly visible to the naked eye except that her very pale color makes her hard to detect. Here she lives from 19 to 77 days according to the temperature, longer of course when the weather is cold. When full grown she produces a large number of eggs, into the hundreds, and one female has been observed to lay 1200 eggs. These are usually laid in gelatinous masses outside the female's body in the tissue of the plant, but in some cases, particularly where the female is very deep in the root, they are retained in the body until the female dies and the body disintegrates, setting the eggs free.

This then is the life history of the nematode. Of course, like all animals there are certain conditions that are essential to growth, most important of which are food, temperature, moisture and air. The food of this nematode is the roots of living plants. They cannot live in decaying material in the soil as can many other nematodes. Neither can they live in all plants but they do live in an immense number of them. We speak of such plants as being susceptible to nematodes. In comparatively few plants they will not grow. We speak of these as being immune, but there are all different stages of susceptibility in plants. Some of them are very susceptible and will quickly die as a result of the attack of the root-knot nematodes. Okra is an example. In other plants the nematodes flourish but do not seem to hurt the plant

(Continued on page 10)



# The Citrus Industry

with which is merged The Citrus Leaf  
Exclusive publication of the Citrus Growers and Shippers

Publication office 550 North Broadway, Bartow, Florida  
Telephone 269

Published Monthly by  
ASSOCIATED PUBLICATIONS CORPORATION  
S. L. FRISBIE - - - - - President  
J. L. FRISBIE - - - - - Secretary-Treasurer  
A. G. MANN - - - - - Production Manager

Subscription, \$1.00 per year in advance

## OUTLOOK IMPROVES

As the freeze of the latter days of January becomes further removed, citrus growers are able to get a clearer view of the resultant damage and are able to make a more accurate estimate of its bearing upon future conditions.

Individual growers in all sections of the citrus belt met with heavy loss, in some cases a total loss of the fruit remaining on the trees at the time of the freeze. In some sections, too practically all growers met with varying losses, while in other sections the loss was slight; in some sections so light as to be almost negligible. Taking the citrus growing sections as a whole, the loss to fruit appears to have been much less than at first feared.

Damage to trees also appears to have been less severe than indicated by early estimates. In this regard, also, the injury varies in individual groves and in different sections. As in the case of fruit, however, the state as a whole suffered less than at first believed.

Rigid enforcement of inspection regulations and curtailed shipments of fruit have resulted in a very material advance in price of both oranges and grapefruit in all Northern markets. Prices now ruling are much higher than could have been expected had the heavy offerings preceeding the freeze continued.

The federal estimate is that there now remains one-third less fruit to market during the remainder of the season than at this time last year. If this is true, and the government estimate is generally considered to be conservative, growers with good fruit still remaining on the trees have reason to look forward to satisfactory prices for the remainder of the season.

With the reduced supply of fruit available and the increased purchasing power of buyers in the consuming markets, growers should be in no hurry to rush their fruit to market. There should be no disposition to flood the distribution centers at any time during the remainder of the season. A continuation of the rigid enforcement of inspection regulations and the shipment of just sufficient fruit to supply the demand in any market, should mean satisfactory profits to the grower who still has fruit of marketable quality. No other kind should be permitted to find its way to market — and there should be no effort on the part of any grower or agency to ship such fruit.

So far the "after-freeze" situation has been handled to the credit of Florida growers and shippers. Let us see that the favorable impression created in Northern markets, as evidenced

by advancing prices, is maintained throughout the remainder of the season — and in the seasons yet to come.

## FLORIDA STATE HORTICULTURAL MEETING

The Fifty-Third Annual Meeting of the Florida State Horticultural Society will be held this year in Tampa on April 2, 3 and 4. According to Secretary Bayard F. Floyd and his active associates, the coming session is expected to fully maintain in its program the high standard which has characterized the meetings of the Society throughout its long period of service to the citrus growers and other horticulturists of Florida.

Founded by many of the then leaders of the citrus industry of the state more than a half century ago, the Florida State Horticultural Society has annually been a gathering together of citrus growers and horticulturists of Florida for the discussion of problems common to them all. Each year speakers of statewide and nationwide prominence in horticultural circles discuss topics of vital interest to growers, giving the results of latest research in laboratory and field. The meeting in Tampa will be no exception to this rule.

Of vital and growing importance to citrus growers, the Florida State Horticultural Society deserves not only the financial support of all growers, but also their attendance at the annual meetings. This is especially true this year when growers are gravely concerned with the rehabilitation of cold-damaged groves, improved methods of grove care and management and the betterment of marketing practices. Every citrus grower will find it well worth the trifling cost of membership and the price of a trip to Tampa to attend the forthcoming meeting.

## BETTER FRUIT PAYS BEST

Quality always tells — and nowhere does it tell better than in fruit — citrus fruit, if you please!

Here's the evidence:

On the New York market last Thursday there was a difference of \$1.19 per box between the high and the low price paid for Florida oranges. Quality did it.

On the same day and in the same market, the range in price of Florida grapefruit was even greater — a difference of \$1.67 per box between the high and the low. Again, quality did it.

In other markets similar variations prevailed — all due to quality, for there was no glutting of markets in any case.

With this wide range in price between the highest quality fruit and fruit of inferior quality, it behooves every grower to at least try to improve the quality of the fruit which leaves his grove. Careful study, improved grove practices and eternal vigilance will do it.

Florida citrus groves never needed greater or more intelligent care than now.

A neglected grove returns no profit to its owner.

## State Horticultural Society To Meet In Tampa, April 2, 3, 4

(Continued from page 5)

### PROGRAM

The Soil Science Society of Florida  
Tampa Terrace Hotel, Tampa, Florida  
Tuesday, April 2, 1940 - 2:00 P. M.

#### SOIL REACTION VALUES AS A BASIS FOR LAND MANAGEMENT PRACTICES

- I. Introduction, R. V. Allison, Gainesville.
- II. Factors Determining Sampling Procedure, Michael Peech, Lake Alfred, G. M. Volk, Gainesville.
- III. Routine Field Sampling and Notes, Alec White, Plant City; Ed Ayers, Bradenton; R. E. Norris, Tavares.
- IV. Laboratory Procedure, R. A. Carrigan, Gainesville.
- V. Method of Reporting, E. F. DeBusk, Gainesville; L. H. Rogers, Gainesville.
- VI. Discussion, H. G. Clayton, Leader, Gainesville; A. F. Camp, Lake Alfred; R. P. Thornton, Tampa; W. E. Stokes, Gainesville; F. S. Jamison, Gainesville.
- VII. Business Meeting.

### PROGRAM

Eighth Annual Meeting  
Krome Memorial Institute  
Chamber of Commerce, Tampa, Florida  
Wednesday, April 3, 1940 - 9:30 A. M.

Address — "Fertilizer Studies with Avocados," H. S. Wolfe, University of Florida, Gainesville; S. J. Lynch, Sub-Tropical Experiment Station, Homestead.

Address — "Zinc Deficiency on Avocados in Florida," Geo. D. Ruehle, Sub-Tropical Experiment Station, Homestead.

Address — "Symptoms of Copper Deficiency on Avocados," Geo. D. Ruehle and S. J. Lynch, Sub-Tropical Experiment Station, Homestead.

Address — "Observations on Protection of Avocados from Cold Injury," W. F. Ward, Brooksville.

Address — "The Present and Future of the California Avocado Industry," Geo. B. Hodgkin, Calavo Growers, Inc., Los Angeles.

Address — "Methods of Grove Irrigation," Wm. H. Krome, Homestead.

Address — "Symptoms of Zinc Deficiency on Mangos," S. J. Lynch and Geo. D. Ruehle, Homestead.

Wednesday, April 3, 1940 - 2:00 P. M.

Address — "Pineapple Growing on Flatwoods Soil," O. R. Winchester, Boynton.

Address — "Rooting Citrus Cuttings with Synthetic Growth Substances," Wm. C. Cooper, U. S. D. A., Orlando.

Address — "Tahitian Plants in a Florida Home," Mrs. Edward Peace, Buckingham.

Address — "Experiences in the Propagation of Some

Sub-Tropical Fruits," H. M. Sherwood, Ft. Myers.

Address — "Variations in Papaya Sugar Content with Season," S. J. Lynch and Joe Hall, Sub-Tropical Experiment Station, Homestead.

Address — "Effect of Recent Freeze on Lynchee, Jaboticaba and Mimosa Bracatinga," H. P. Traub and T. Ralph Robinson, U. S. D. A., Orlando.

Address — "Experiences in Protecting Papaya Plants from Cold Injury," S. U. Stambaugh, Babson Park.

Address — "Observations on Cold Injury to Tropical Plants," S. J. Lynch, Sub-Tropical Experiment Station, Homestead.

Address — "Root Stocks for Tangelos and Other Citrus Hybrids, and Fruit Seed Content," T. Ralph Robinson, U. S. D. A., Orlando.

### PROGRAM

Second Annual Meeting  
Vegetable Division  
of The Florida State Horticultural Society  
Tampa Terrace Hotel, Tampa  
Thursday, April 4, 1940 - 9:30 A. M.

Address — "Research Work at the Vegetable Crops Laboratory," Dr. J. R. Beckenbach, Bradenton.

Address — "Some Effective Methods of Applying Fertilizer," Wm. Nettles, Gainesville.

Address — "Important Factors in the Marketing of Florida Iceberg Lettuce," W. M. Scott, Sanford.

Address — "Studies on Cost of Producing Celery on Everglades Organic Soils," R. H. Howard, Gainesville.

Address — "Factors Relating to Outbreaks on the Celery Leaf Tier in Central Florida," C. B. Wisecup, U. S. D. A., Sanford.

Address — "What May Be Accomplished in Vegetable Production by Water Control on Sandy Flatwoods Soils," R. T. Lingle, Boynton.

### PROGRAM

Fifteen Annual Meeting  
Florida Rose Society

Tampa Terrace Hotel, Tampa, Florida  
Wednesday, April 3, 1940 - 2:30 P. M.

Address of Welcome, R. E. L. Chancey, Mayor of Tampa.

Response and President's Address, G. H. Blackmon, Gainesville.

Business, Reports and Election of Officers.

Address — "The Use of Roses in Landscaping Streets and Highways," Mrs. Lucille F. Yates, Tallahassee.

Address — "New Roses for Florida," Mrs. H. R. Woodruff, Cocoa.

Address — "Grades and Standards of Acceptable Rose Planting Stocks," H. G. Hastings, Atlanta, Ga.

Discussion.

### Fifteenth Annual

Florida State Rose Show

Tampa Terrace Hotel, Tampa, Florida

April 3 and 4, 1940 — Opens at Noon April 3

Sponsored by Tampa Federation of Garden Clubs

Mrs. W. L. Waring, Jr., Chairman

## As Our Readers See It

Editor, The Citrus Industry,  
Bartow, Florida.

Dear Sir:

It seems that we have a super-abundance of good gubernatorial timber available this year. It is possible for any one of them to make a Governor, but from my viewpoint it seems that Senator Holland is the outstanding man among them all.

I am a 20 acre citrus grower and have been shipping citrus for more than 20 years. I feel sure that Senator Holland is the best qualified man

among them all to serve the citrus grower. He has not only been closely associated with the growing and marketing end but he is most familiar with the ups and downs which the grower has had in our legislative halls. I have followed very closely for the past ten years and from a growers angle I think Senator Holland has handled citrus legislation in a very satisfactory manner.

When he goes into action in the executive chair he won't have to ask for the diagnosis of a sick citrus industry, for he will have it at the tips of his fingers.

He is not a man of ordinary caliber. He is easily an outstanding man. I served in the house at a time when he served in the Senate, and in this

capacity I have seen him in action, and don't doubt for a moment his ability to swing into action on short notice.

He is vigorous and unrelenting in debate, but always fair. His conduct in public and private life has been a gentleman. He has a fine public record which is above reproach.

Spessard Holland is the all around man for Governor. I am sure the voters will make no mistake in voting for him if they really want efficiency and honesty in Tallahassee. Three out of every four citrus growers that I have talked to in this county are for Holland.

Yours very truly,

A. B. ENDSLEY,  
Brooksville, Florida.

### ROOT-KNOT NEMATODES AND HOW THEY WORK (Continued from page 7)

much. Mulberries are an example. Almost any old mulberry tree is heavily infested with root-knot nematodes but appears to be perfectly healthy. Evidently mulberries are less susceptible to the poison the nematodes give off. Sun flowers are another example. In other plants the root-knot nematode does not seem to flourish but does invade the tissue and grow there to some extent. Onions are an example, and many weeds. These plants too are not much injured by root-knot, but they will carry root-knot in the soil for years.

Why some plants are immune and others are resistant or very susceptible is a mystery which has not been solved. Whether it is due to some poison the plant gives off or lack of some essential element in the sap or to the mechanical structure of the plant, we do not know. We do know that some very closely related plants, those belonging to the same species,

may differ widely in their susceptibility to root-knot. For instance, the Iron and Brabham varieties of cow peas are highly resistant whereas the Whippoorwill and most others are very susceptible. Some varieties seem to be resistant in one locality and susceptible in another. For instance, several years ago the U. S. D. A. developed a cow pea they called "Victory" which was stated to be very resistant to root-knot in Washington and surrounding territory. These that we tried out here in Florida of this variety were found to be very susceptible to root-knot.

Of course this suggests one very important way of getting around root-knot, to select resistant strains. Anyone finding a few healthy plants or a single healthy plant in a field otherwise heavily damaged by root-knot should save the seeds of that plant. Perhaps it was healthy only because the worms did not happen to find it but there is always a chance that it is naturally resistant and that it will transmit its resistance to its

progeny.

We turn next to the subject of temperature. The worms make very little growth at soil temperatures below 55 degrees F. and do not really make good growth until the soil temperatures rises to 61 degrees F. However, the worms are not killed by cold. Even temperatures well below 0 degrees F. do not kill them. They are not as abundant in the north as

(Continued on page 18)

## Among Our Advertisers--

### Speaking of Irrigation

All of us, particularly growers who have suffered, recall the extremely dry periods of recent years, and how difficult it was to secure pipe for grove irrigation during drouth conditions. Now, at considerable invest-



ment, a new Florida company has been established in Tampa for the production of Ames portable pipe.

Sustained soil moisture is essential. With the season at hand when lack of natural moisture may be expected, thought should be given by grove owners and truck growers to the wide variety of portable pipe and sprinkling equipment now available. In addition to the drive type of portable pipe, there is the new light weight fast QCL (Quick-Coupling-Lock) pipe. This is pounds lighter than most rubber gasket pipe, reducing and speeding up moving.

Considerable low-pressure sprinkling is practiced by grove owners. Nothing has yet been devised quite equal in engineering to perforated pipe, according to the Ames man. Pressure required to operate is much less than in other types of irrigation, while perforated pipe distributes evenly all available water at the absolute minimum of power, is one major claim made for it.

Many growers wish to take water from one point to another, to flood, to hit high spots, to serve a ditch or to irrigate truck crops. A small supply of slip-joint pipe will take all of it to the desired point "right now," and without waste. Such pipe is available in 3-inch, 4-inch and 5-inch sizes, and all the water is put to work, even very small amounts doing a maximum job. In the 6- to 10-inch sizes, more sizeable volumes are handled, up to 1500 gallons per minute.

Here in this new Florida plant, says the Ames man, the individual needs of growers will find a quick and understanding interpretation. Special fittings are made up, special perforated pipe systems for vegetables and gardens, lawns and golf courses are worked out as well as grove installations.

Users of this new Floridian equipment still have the services of Cameron & Barkley sales service to guide their selection of proper pipe and to assure a workable, well-engineered system.

### AMES Portable

## PIPE!

MADE IN FLORIDA  
• FLOOD • FURROW •  
and

**Perf-O-Rain**  
*Life*  
FOR YOUR CROPS!



### LOW-PRESSURE SPRINKLING

10, 15 and 20 ft. lengths

#### • SURFACE PIPE

the only pipe in the world with the END-LOCK collar. It protects your investment.

#### • QCL

Quick - Coupling, pressure or sprinkler lines. Fast, simple, strong.

### PLAN YOUR SYSTEM GROVES BERRIES TRUCK

Consult the Cambar  
dealer or service man

**Cameron & Barkley**  
TAMPA, FLA.  
A M E S ! Nothing Less!





# If Your Trees Ever Needed Attention They Will Need It For The Summer Application...

Each must receive fertilizer treatment suited to its individual requirements — We are prepared through our large force of field men to offer the most practical and economical recommendations as to what that fertilizer treatment should be.

## Horticultural Society Visitors

Are urged to stop by  
and see us while in  
Tampa — We will  
deeply appreciate  
a visit from you.

## EXTRA-VALUE VITA-EL BRANDS

(Containing All 10 Vital Elements)

Are best able to help your trees quickly  
recover from their recent shock because  
every Plant Food Need can be supplied in  
proper proportion in these Superior Fer-  
tilizers ....



## SUPERIOR FERTILIZER COMPANY

FACTORY AND OFFICE EAST BROADWAY AT 47th STREET

Phone Y-1623

P. O. Box 1021

TAMPA, FLORIDA

G. D. Sloan, Pres.

W. G. Welles, Sales Manager



# Summary Of Florida Agricultural Outlook for 1940....

BY C. V. NOBLE  
AGRICULTURIST ECONOMIST  
FLORIDA AGRICULTURAL  
EXPERIMENT STATION

Many business concerns used the week between Christmas and the New Year to take an inventory for the purpose of closing their 1939 records and to prepare for the year ahead. The lull in consumer buying, after the heavy Christmas trade, makes this an ideal week for taking stock and planning for the future. It is also an appropriate time for the grower or farmer to take inventory and to plan for 1940. The rush of marketing the choice fruits, vegetables, livestock and livestock products for the Holidays is over.

It is the purpose at this time to briefly summarize the agricultural business for 1939 and to bring out some points in the present situation that may be used by individual farmers in making their 1940 business plans.

The national cash income from the sale of agricultural products, including Government payments, for the first 10 months of 1939 amounted to \$6,335,000,000, or 2 per cent higher than for the corresponding period in 1938. For Florida, the cash farm income for the same 10-month period in 1939 amounted to \$89,658,000, which was 5 per cent higher than for the same period in 1938. Crop sales represented 79 per cent, livestock and livestock products sales 16.8 per cent, and receipts from the Government under the Agricultural Adjustment program 4.2 per cent of the total Florida cash income during the first 10 months of 1939. Data are not as yet available for November and December, but the Federal Bureau of Agricultural Economics predicts that the cash income for these two months will be larger than for the corres-

ponding months in 1938.

The November 15 report of prices received by farmers, issued by Federal-State Agricultural Statistician, H. A. Marks, indicates appreciably higher prices for most of the important Florida farm and grove commodities than those received a year earlier. The principal exceptions were hogs and eggs, the prices of which were lower than on November 15, 1938. The improvement in price for citrus and commercial truck crops over 1938 is undoubtedly due to the improvement in general business conditions affecting domestic demand for these products, since the supply is not greatly different from a year ago. Industrial activity was already on the increase before the outbreak of the European war, and since September the increase has been very rapid. As the year drew to a close, business activity in the United States was reported at the highest level on record. A slackening in productive activity is expected in the early part of the present year, but the downturn is not anticipated to be so severe as to greatly affect the improved consumer purchasing power of recent months. It is not expected that the war will increase export demand for farm products during the early months of 1940, but increased foreign purchases of industrial products may strengthen the domestic demand for agricultural commodities.

"The 1940 Farm and Home Outlook for Florida" has been prepared in anticipation of an appreciable increase in consumer purchasing power during the present year. This report will be off the press at an early date and will be mailed to any resi-

dent of Florida upon request.

Following is a general summary of the 1940 Florida farm and grove outlook:

1. Fertilizer, labor, machinery, and other farm production costs are expected to be slightly higher in 1940 than in 1939.

2. Consumer demand for citrus fruits in the United States during 1940 is expected to be somewhat higher than in 1939, but the large supplies of competing fruits, as well as citrus, will make it difficult to dispose of the Florida citrus crop at reasonable returns to the grower unless there is more improvement in consumer purchasing power than is now anticipated.

3. The acreage planted to fall and winter truck crops in Florida has been reduced somewhat due to climatic conditions. This reduced

(Continued on page 17)

## IRRIGATION

Ames Lockseam Slip Joint Pipe  
Miller Lock Joint Pipe  
Peerless Turbine Pumps

Worthington and Myers Centrifugal Pumps

**The Cameron & Barkley Company**  
Machinery & Industrial Supplies

107 South Franklin Street

Tampa, Florida

OUR 75TH YEAR OF SERVICE



## The Fruit Situation . . .

### UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau Of Agricultural Economics

Citrus crop prospects in Florida and Texas were reduced sharply as a result of the late January freeze. Although parts of the crops had already been marketed, the damage was severe to unharvested fruit, and total supplies of oranges and grapefruit available for the period from now until May are indicated to be about one-third smaller than a year earlier. Market prices of these two fruits in recent weeks have reflected the changed situation and have advanced considerably. As a consequence the averages in February and March were slightly higher than a year earlier. Since the freeze did not extend to California, orange production in that area was not affected; in fact, production prospects have improved slightly for navel oranges and lemons.

The indicated production of winter oranges and grapefruit in Florida and Texas was sharply reduced by the freeze. Preliminary reports indicate that the loss amounted to 7.9 million boxes of winter oranges, 6.2 million boxes of grapefruit, and 600,000 boxes of tangerines. The damage was most severe in Florida, where the loss is indicated at 7.6 million boxes of oranges, 3.4 million boxes of grapefruit, and 600,000 boxes of tangerines. In Texas indications point to losses of 280,000 boxes of oranges and 2.8 million boxes of grapefruit.

It is estimated that about three-fourths of the early and mid-season oranges and grapefruit, very few valencia oranges, and slightly more than two-fifths of the grapefruit crop had been harvested prior to February 1, when a shipping embargo was made effective in order to prevent frozen fruit from reaching the market. The embargo remained in effect until February 8. In Texas about one-half of the orange crop and about a third of the grapefruit crop had been harvested prior to the freeze.

The freeze did not affect the California winter orange crop, and production prospects improved to 16.1 million boxes from 15.4 million indicated as of January 1.

On the basis of preliminary information concerning crop prospects, and losses from the freeze in Florida and Texas, the supply of winter oranges available for market after February is indicated to be about 30 per cent less than that available a year earlier. These oranges will be the

important source of market supplies until about the middle of May, when the California Valencia crop is expected to begin moving in volume. Indications also point to a reduction of about 35 per cent from a year earlier in the supply in grapefruit available for the remainder of the current season.

Production prospects for lemons increased slightly during January, and the crop was indicated to total 11.1 million boxes as of Feb. 1, compared

with 10.6 million boxes the indicated crop a month earlier, and with 11.3 million the crop produced in 1938-39.

As a result of the reduced prospects for winter oranges and grapefruit and the disruption of marketings, prices of these two fruits in market centres rose sharply during the last half of January and February. Auction prices of Florida oranges at New York rose 67 cents per box between the week ended January 20 and the week ended February 3. The rise in prices of Cali-

(Continued on page 17)



### The Care of Citrus

is of great importance to you and to us. The low temperatures during the past months make it all the more important that painstaking thought be given your fertilizing and insecticide programs.

**NACO** can greatly assist you in planning these programs and solving your problems, for our field men have the practical experience and technical knowledge that should make their unselfish advice of real value to you!

There's a **NACO** field man near YOU ... call him in today!

**NACO FERTILIZER  
COMPANY** JACKSONVILLE  
..... FLORIDA

**ASK FOR A DEMONSTRATION**  
of the **ROOT** high velocity oscillating **DUSTER** that  
can also be used in conjunction with spraying!



# *The* LYONIZER

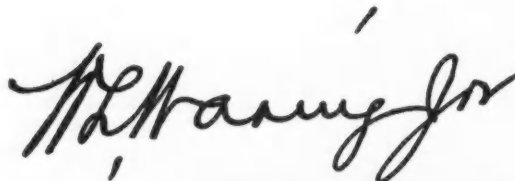
Department

COMPILED BY THE LYONS FERTILIZER CO.

WE INVITE YOU  
AND ALL VISITORS TO THE  
53rd Annual Meeting  
— of the —  
Florida State Horticultural  
Society  
TO BE HELD IN TAMPA  
April 2, 3 and 4

To Come and See Us

Whether you are a customer of ours,  
whether you have ever been a customer or  
even if you never expect to be, we will wel-  
come the opportunity of knowing you better  
and will appreciate your calling at our office  
while you are in town.



President and General Manager  
The Lyons Fertilizer Company

## ADVERTISEMENT — THE LYONS FERTILIZER CO.

**SUGGESTIONS FOR FARM  
AND GROVE CARE**

Prepared by Horticultural Department,  
Lyons Fertilizer Co.

**Fertilizer**

Now is the time to start making plans for your summer application of fertilizer. We feel that the summer application is one of the most important factors in determining the quality of fruit you will have this fall, and that it is also important in making abundance of new growth. Most growers used a topdresser during the spring and will want to come back with a heavy application of well balanced complete mixtures containing high percentages of organic materials this summer. The Lyons man in your territory will be very glad to advise with you regarding the proper analysis to use, and if you will give this man a call you will find that he is thoroughly competent to give worth while information. Call the Lyons Man at once.

**Pruning**

During the past few days we have noticed quite a bit of wood damage beginning to show up. In many groves a flush of growth has been made and now the weaker branches are beginning to die. We suggest that you delay pruning until later in the season when it will be possible to determine just how much actual wood damage we will have in order that the pruning operation can be completed at one time.

**Cultivation**

Keep young trees thoroughly cultivated. If it is beginning to get dry in your section intensive cultivation will tend to help in conserving the moisture.

**Disease and Insect Control**

It is very important to give considerable thought to the control of your insects and diseases. Many growers are including such as zinc and manganese in their spray program this spring. There is no set formulae that we can give you here to take care of your grove, but if you will consult the Better Fruit

**Field Men Report**

**Polk & Highlands Counties**  
**J. M. Sample**

Nearly all growers in this territory are enthusiastic about the way in which their trees have responded in growth and bloom since the freeze. Trees that have retained a major portion of their foliage are putting forth extra heavy bloom and growth, while the trees that were defoliated are putting out a nice growth but very little bloom. The grapefruit and valencia crop now on the trees have rapidly deteriorated and is being moved as fast as possible. It is estimated by packing house men that the valencia crop will be cleared here by April 10. Prices on oranges have ranged, depending on condition, from a complete loss to \$1.25 per box on the tree.

**East Coast**  
**F. W. Scott**

A considerable acreage of beans, peas and squash were planted on the lower east coast after the freeze. These crops were put in to try and utilize some of the fertilizer that had been applied to the main crop before the cold weather. Tomatoes throughout the section are looking just fair but with good weather from now on will come along all right. Beans planted before and a few days after the freeze do not look so good but crops planted approximately a week later had much better weather and are looking fine. Harvesting is just getting under way.

**Southwest Florida**

Tomatoes in the Ruskin section are beginning to grow in fine shape. The good weather during the latter part of the month was certainly beneficial for all vege-

Program recommendations or get in touch with the Lyons field man you can obtain information that will be very beneficial in making up the spray program that your individual grove will require. Quality fruit always brings a better price on the market, and the sure way to have real quality is to follow a sound program of insect and disease control.

table crops. There is quite a tonnage of citrus fruits remaining in this territory that is in good shape. Trees are blooming and making a nice spring growth. Most growers are planning to come in with early summer application of fertilizer, and are also planning to keep their fruit thoroughly sprayed in an effort to produce real quality.

**West Central Florida**  
**A. E. McCartney**

Strawberries in this section are moving to market in the heaviest picking of the season. The quality is good and most growers are feeling optimistic. Other vegetable crops in this territory are looking good. Citrus growers throughout the territory are making plans to give their trees the best of care during the summer and are expecting to set a pretty nice crop.

**Hillsborough & Pinellas Counties**  
**C. S. Little**

Groves that were not completely defoliated during the freeze are putting on a nice bloom and spring growth. Practically all of our groves in this territory used a topdresser this spring and will come back with regular application of fertilizer in summer. There is quite a bit of interest being shown by the growers in giving their groves proper nutritional spray this spring.

**North Central Florida**  
**G. W. Phillips**

New growth and bloom is developing slow in this section due to lack of warm growing weather. However recent light rains followed by warmer weather is showing its effect now, and trees are beginning to put out nice growth. Growers throughout this territory are expecting considerable less fruit to set this season than was set last spring. If normal rains and sunshine prevail from this time on I believe this section will set a 75 per cent crop. Many growers are replacing young trees, and some large new plantings have been made. There will be quite an increase in the acreage of cotton planted this spring in Lake county. Growers throughout the section are beginning to diversify more than ever before.

## Effects Of Citrus Fruits In Dental Hygiene

Because the histological changes are identical with scurvy, certain types of pyorrhea respond excellently to vitamin treatment, it has been found by the scientific advisory board of the Florida Citrus Commission. Findings of the commission's board will be published and made available to the medical and dental profession.

"In the type of pyorrhea characterized by loosening and wandering of the teeth," the scientific board found in comparing symptoms that changes were "histologically identical with those found in unquestionable cases of infant scurvy, and in animals maintained on a diet deficient in vitamin C." The board also found that low vitamin C levels prevailed in the blood of patients with periodontal disease and rarefaction of the alveolar bone "not solely attributable to local inflammatory processes."

Oranges and grapefruit are standard remedies for scurvy, being the most economical common sources of vitamin C, the necessary specific for this deficiency disease.

Searching dental literature to find references to use of citrus fruits for oral disease, many statements have been found indicating dental experts feel the incidence of dental caries (tooth decay) and pyorrhea is far less when the diet includes an abundance of natural foods containing essential vitamins and mineral salts.

Importance of proper vitamin supply was illustrated when a group of children, already on a good diet, were fed vitamin and mineral supplement for six months. At the end of that period, only one-quarter the number of dental cavities had developed as compared with a control group.

Ability of orange and grapefruit juice to increase assimilation and utilization of calcium also is of major importance, particularly in children, the advisory board determined. The adult or fully developed tooth is not as a whole subject to modifications in structure or calcification by variations in the calcium metabolism, the board reported, but the growing tooth is characteristically sensitive to such changes which are in turn dependent, at least in part, on vitamin and dietary factors.

"In growing teeth," the board said, "lack of vitamin C interferes

with the formation of dentine, cementum and enamel, and the pulp becomes separated from the dentine by liquid produced by odontoblasts. Hence the need for adequate vitamin and mineral supplement to the diet of the mother during pregnancy and to that of the infant during its first month of life."

Investigations have determined that citrus fruit is most potent in ridding the mouth of germs over an extended period of time. In this connection, the board points out that it is the custom in European and Latin-American countries to eat fruit at the end of the meal.

"The fruit acts mechanically," the board states, "to remove food particles from the teeth and gums, and its tartness, particularly in the case

of citrus fruits, stimulates the glands of the buccal mucosa to pour forth abundant secretion which tends to clear the surfaces of food and bacteria by washing them before it. Fruit as the final course of a meal provides also a sense of well-being by leaving the mouth cool and pleasantly refreshed. Thus citrus fruits aid in maintaining normal conditions in the mouth and in promoting dental health."

Strongly antiseptic mouthwashes may free the mouth from bacteria rapidly, the board states, but the incidental injury to the superficial layers of buccal mucosa provides an excellent breeding ground for germs, and two hours after use of such antiseptics bacterial flora are present in far greater numbers than before the treatment.

"The use of citrus juice, on the other hand," the board found, "definitely diminished the amount of germ life present two hours after its use."



**F**OR BETTER YIELD and better quality use Chilean Nitrate of Soda for your crops. It is the natural nitrate fertilizer — the only natural nitrate in the world.

Chilean Nitrate is guaranteed 16% nitrogen. It also contains, in natural blend, small amounts of other plant food elements — protective elements such as iron, manganese, magnesium, boron, iodine, calcium, potash, zinc, copper and many more. These protective elements act much like vitamins in their effect on your crops.

Use Natural Chilean Nitrate. It is well suited to your crops, your soil, your climate. No price increase this entire season, and there is plenty for everybody's needs.

# NATURAL

## CHILEAN NITRATE OF SODA

**ON YOUR RADIO**—Enjoy the Uncle Natchel program every Saturday night on WSB, WRVA, and WSM, and every Sunday afternoon on WIS, WOLS, WPTF, WBT, KWKH, WJDX, WMC, WWL, WAGF, WDBO, WSFA, WJRD, WJBY.



For those vital

Nutritional  
Sprays

use top QUALITY



BRAND

## Spray Materials

Many groves need extra minerals now to overcome the season's weather shocks. For example, defoliated trees have the double task of putting out leaves, bloom and wood. And for new foliage, trees need MANGANESE, the "green element," to prevent chlorosis. Other nutritional elements may be required — and when they are, TEE-CEE Brand Materials give you top quality quality at economical cost.

Tee-CEE Brand  
65% Manganese  
Sulphate

Made in spray grade; finely ground, leaves no residue. Also analyzes high percentages of SULPHATES OF COPPER, IRON, ZINC, MAGNESIUM and CALCIUM, besides other minerals in lesser amounts. Get this extra value—use Tee-Cee Brand.

## 89% Zinc Sulphate

Monohydrated form — another top quality material made for nutritional sprays.

53% Tri-Basic  
Copper Sulphate

The "neutral" copper spray material. Eliminates use of lime in Bordeaux, therefore no objectionable residue build-up.

TEE-CEE Quality Spray Materials may be secured from your fertilizer dealer. Insist on this brand for better protection.

Distributed by:

**U. S. Phosphoric  
Products Corp.**  
Tampa, Florida

## PLEASE ACCEPT APOLOGY

Homestead, Fla., March 13, 1940.  
Mr. S. Lloyd Frisbie, Editor,  
The Citrus Industry,  
Bartow, Fla.

Dear Mr. Frisbie:

In response to your recent article on page 6 of the current number of The Citrus Industry, in which you state a well informed citrus authority had personally made a survey of the entire citrus growing area of the state and gave you his report of relative damage done in respective counties, you failed to mention Dade County, and I beg to inform you that we do raise oranges and grapefruit here which were definitely not hurt by the recent cold spell, temperature not going below 29 at my grove and that about an hour.

I grant you we are a small territory of citrus growers here in the Redlands, and our trees do not grow as large as up-state due to rock formation in which they are grown, but we really do grow the best tasting fruit in the state, believe it or not.

Yours very truly,  
MARIE D. ALLEN.

THE FRUIT SITUATION  
(Continued from page 13)

ifornia naval oranges amounted to 83

cents per box, of Florida grapefruit, 55 cents and of Texas grapefruit at Chicago, 30 cents per box. As a consequence, orange and grapefruit prices in February averaged slightly higher than a year earlier.

SUMMARY OF THE 1940 FLORIDA AGRICULTURAL OUTLOOK  
(Continued from page 12)

acreage, together with increased demands, should result in higher prices to growers for these crops.

4. The demand for the small 1939 crop of Florida Sea Island cotton is good, and it appears that this crop could be considerably increased to advantage in 1940.

5. The 1940 acreage of Florida flue-cured tobacco should be kept within the farm allotments and special effort made to improve the quality.

6. The beef cattle and the dairy cattle situation in Florida for 1940 seems favorable.

7. The price outlook for hogs is unfavorable for the early months of 1940.

8. Poultry and egg prices are expected to be less favorable for the remainder of this winter than a year earlier, due to greatly increased marketings which resulted in larger than normal storage holdings.

For an efficient Spreader  
with Copper Sprays

use



## WETTABLE SULPHUR

Complete coverage is essential to prevent melanose spores from getting a "foothold" on leaf tissue and fruit when you use Copper Sprays. That means an efficient spreader is necessary. WHITE BAND WETTABLE SULPHUR does the job — spreads the copper for complete coverage of foliage and fruit. At the same time it gives protection against over-present rust mites. WHITE BAND WETTABLE SULPHUR disperses readily in the spray tank without excessive foaming; doesn't clog spray nozzles.

WHITE BAND Quality Insecticides  
are made in Florida by

**U. S. PHOSPHORIC PRODUCTS CORPORATION, Tampa**

## WHITE BAND

Dusting Sulphur and  
Lime-Sulphur Solution

also meet the exacting quality standards that have made the WHITE BAND name foremost in Sulphur.

## ROOT KNOT NEMATODES AND HOW THEY WORK

(Continued from page 10)

they are in the south, not because of low winter temperature but because summer temperatures are not hot long enough to build up a heavy infestation. On the other hand, 89 degrees F. is about the highest temperature at which they can develop. Even at soil temperatures of 82 degrees F. there are fewer eggs produced than at lower temperatures. In other words, soil temperatures between 61 and 82 are about the limits for best development. For this reason in the central part of the state root-knot is not such a serious matter between the first of November and the first of April. Many plants grown during that time suffer very little, strawberries for instance, but plants carried through the summer to produce new plants may suffer severely.

Neither high nor low temperatures, however, will necessarily kill the nematodes. When subjected to these unfavorable temperatures the eggs form a very hard covering called a cyst and in this condition they may lie dormant for months or even years until the temperature again becomes favorable.

A third requirement is the proper amount of moisture. Although we have found root-knot nematodes on Sesbania growing in the water, they usually do not thrive well in poorly drained soils. Observations around Lake Okeechobee a number of years ago when certain truck lands were flooded indicated that about four months were necessary to kill out root-knot nematodes by flooding. In fields covered by water for four months, plants were usually free of nematodes, but less time was not sufficient. They will even stand salt water for a brief period. Observations made on fields in Hillsborough County which were covered by salt water, or leastwise by water so brackish as to kill off citrus trees, for 24 hours were still found to have plenty of nematodes when these soils were planted to susceptible crops. On the other hand in extremely dry soils the nematodes are killed. Soil dry enough to be blown by the wind will not carry nematodes, but pieces of infested roots might be blown around in such a manner and still carry live nematodes. Older roots in the first inch or so of soil will be found to be free of knots whereas deeper roots are infested.

The fourth essential for the development of nematodes is air. There must be a sufficient amount of air

in the soil for their development. It is probably because of the compact nature of clay soil, hence insufficient air, as well as inability to navigate through such soil, that is responsible for the fact they are less destructive in such soil than they are in sandy soils, but as in the case of temperature, when either moisture or air are insufficient, the eggs may encyst and lie dormant until the essential condition, whether it be heat, moisture or air, is re-established.

Root-knot nematodes seem to be very tolerant as to the acidity or alkalinity of the soil. They seem to flourish in a range of soil pH ranging from four to eight and a half. They usually do not do as well in very acid soils. An application of sulfur on the soil will usually reduce the numbers but on the other hand when grown in cultures in this laboratory they seemed to do a little better on media a little on the acid side.

So much for the life history and the way nematodes work. Their control will be taken up later. Points to bear in mind are that in addition to suitable food, they must have suitable temperatures, suitable moisture, and a sufficient amount of air in the soil.

## CLASSIFIED

## Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

**FOR CITRUS NURSERY TREES** not damaged by freeze see **THOMPSON NURSERIES**, Route 1, Box 181, Winter Haven, Fla.

**SUPERIOR CITRUS TREES** of principal varieties. Also limes, lemons and the best new varieties of tangelos and avocados. **Ward's Nursery**, Avon Park, Florida.

**CITRUS SEEDLINGS**; Cleopatra, Sour, Sweet, Rough Lemon, Grapefruit. **Grand Island Nurseries**, Eustis, Fla.

**CITRUS BUDS AND SEEDLINGS**—Usual Standard Varieties on Sour Orange Stock, also Sour Orange Seedlings. **Nursery at Blanton, Pasco County**. For information and prices, write **R. P. Thornton or H. S. Pollard, Copothorn Nurseries**, Box 2880, Tampa, Florida.

**GRAFTED AVOCADO TREES** of leading varieties, priced low. **R. B. Rosentreter**, Winter Haven, Fla.

**ALYCE CLOVER SEED**. Ripe and cleaned. Ideal cover and hay crop. Write for information. **P. E. Snyder**, Box 866, Lakeland, Fla.

**PIPE** — Approximately 800 feet 5-inch Ames End Lock, plain surface pipe. Perfect condition. Used once. Also new pipe. Write stating full needs. **Cameron & Barkley**, Tampa, Fla.

**CHOICE Rough Lemon Seedlings** 6 to 20 inches high, \$10.00 per thousand. **Olan Altman**, Sebring, Florida.

**CITRUS NURSERY TREES**; Standard and new varieties. Low prices for Fall planting. **Grand Island Nurseries**, Eustis, Fla.

**LARGE AND SMALL orange groves** for sale also acreage suited for citrus culture, dairying and general farming. **Charlton & Associates, Valuation Engineers and Real Estate Appraisers**, Ft. Lauderdale, Fla.

**ALYCE CLOVER SEED "Florida's Alfalfa"** — The perfect cover crop for groves because of its rich nitrogen content and because it quickly disintegrates and is absorbed into the soil. Write for descriptive folder and prices. **Ocala Ridge Tung Plantations**, 302 So. Natl. Bank Bldg., St. Petersburg.

**CROTALARIA SPECTABILIS** and Hay Peas. Write for our prices. We also have a full and complete line of all farm seeds. **Robinson's Seed Warehouse**, Cairo, Georgia.

**"MAIL ORDER Operator desires contact with grower of high grade avocado pears.** Have interesting proposition for grower of highest quality fruit." **F. R. Gardner**, P. O. Box 528, Greenville, Pa.

**PLANT SOAR'S SWEET ORANGE** trees for profit, fruit sells in September for \$1.12½ to \$1.50 per box, no losses from drops or frozen fruit, does not dry out on lemon. **Pomona Nurseries**, Dade City, Fla.

**EMPLOYMENT WANTED** — World War veteran. Citrus, landscaping and salesman experience. 12 years last employer, college education. References. Box 384, Eustis, Fla.

**GROVE OWNERS ATTENTION**—I will exchange old established manufacturing concern doing splendid business for producing orange and grapefruit grove in good section free and clear of encumbrances. Value approximately \$75,000.00. Address **A. J. SIMMS**, Tampa, Fla.

## Industry Seeks Exemption From Wages-Hours Law

On a three-sided front, the Florida citrus industry is attempting to obtain exemption for itself from the provisions of the fair labor standards act, popularly known as the wage-hour law.

Making the law applicable in Florida's citrus industry would restrict the number of hours which a worker might get during a week, as industry leaders say they cannot pay time and a half for all work in excess of 42 hours, and market oranges in competition with other fruits processed over a short period of time and not subject to the law.

The three-sided battle against the law includes court action, redefinition by the wage-hour administrator and amendment of the law by congress. The Barden bill is the vehicle for congressional amendment, and the industry hopes for a substantially one-sided vote in the house. Whether the senate will be able to act on it at this session is problematical.

The Florida citrus commission a few days ago adopted a resolution

approving the Barden bill and urging the citrus industry to get behind the measure. The bill has been reported out of the labor committee in the house and has a good chance for a vote at this session.

A hearing is scheduled for Washington on May 1 at which the industry will seek to prove its claim for exemption before the wage-hour administrator. Since the original definition was promulgated, a new administrator has been appointed. The citrus commission's attorney will attend this hearing and a substantial group of industry representatives are expected to be present also.

On the court front, the industry has petitioned for a rehearing after the federal circuit court of appeals at New Orleans had overruled the granting of an injunction by Judge Akerman which in effect stopped operation of the law.

Citrus must compete in the market with other fruits, such as apples, which are exempt from the law because of their short season, it was pointed out.



### 101 Plans for Building Homes

Beautiful book of home building plans. 101 to select from. Photo of finished home. Various sizes. Sent postpaid for \$1.50.

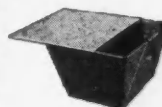
THE BAIRD CO.  
Box 2022 Jacksonville, Fla.



9 Gallon Junior  
Louvre Heater

## FROST PROTECTION

For 25 years National-Riverside Heaters have saved millions of dollars to citrus, deciduous and truck growers. Low in Cost and High in Efficiency... Write to



National-Riverside Co.  
P.O. Box 925, Tampa, Florida

3 and 9 Gallon  
Smudge Pot

# This is the "RAINY SEASON" in Florida

## Half of the Annual Rainfall Occurs in These 4 Months

FOR that reason, it is important that the fertilizer applied at this time be resistant to the leaching action of heavy rains. The Florida Agricultural Experiment Station, in recent experiments including several forms of nitrogen, found that

### Urea Nitrogen is Resistant to Leaching

With Norfolk sand, typical Ridge citrus soil, nitrogen applied as Urea compared favorably with that of high-grade natural organics in its resistance to leaching. (Reprint of report on these tests will be sent on request.)

"URAMON" is an attractive form of Urea nitrogen that is used in complete mixtures, top-dressers, and for direct application.

Ask for fertilizers made with Urea

"URAMON"  
Fertilizer Compound  
(42% Urea)  
Reg. U. S. Pat. Off.

Urea-Ammonia  
Liquor  
(45% Nitrogen)



E. I. DU PONT DE NEMOURS & CO. (INC.)  
AMMONIA DEPARTMENT WILMINGTON, DELAWARE



# Holland Deserves Your Vote



SPESSARD L.  
**HOLLAND**

As Your Governor  
Will Give You An

Honest  
Clean  
Courageous  
Efficient  
Sympathetic  
Common Sense

Administration  
Of State Affairs As Your  
Servant In  
Tallahassee

For the reason that his training, experience and familiarity with governmental problems equip him to serve the people of Florida as Governor more capably than any other man seeking the office.

## Holland's Legislative Record Shows

That he has never been dominated by any group or organization. He has always shown equal and full consideration for the thoughts and ideas of everyone — rich or poor, large or small. **HE IS FAIR.**

**HE IS HONEST.** No individual or group interested in legislation has ever had to worry about Holland "selling out" nor have they had to wonder or worry about "who talked with him after we left."

**HE HAS WORKED FOR THE GROWERS AND FARMERS.** At the request of the citrus growers of the state Holland sponsored the laws they prepared — either new laws or improving the laws passed in 1935 and 1937. He likewise worked for vegetable, tobacco, cotton and live stock producers.

**HE HAS WORKED FOR SCHOOL IMPROVEMENT,** by assisting in the passage of the Florida School Code, and the Teachers Retirement Act, Etc.

**HE HAS HELPED MERCHANTS AND BUSINESS MEN,** by opposing the frequent efforts to secure the passage of a Sales Tax. He opposed the Gross Receipts Tax—leading the fight to repeal this tax which works such a hardship on the small merchant. He likewise sponsored the Fair Trade Act.

**HE HAS BEEN A FRIEND OF LABOR,** having sponsored the Workman's Compensation Act, the Unemployment Insurance laws, and in many other ways has fought the fight of the laboring man in the legislature.

**HE HAS BEEN A LEADER IN MANY CONSTRUCTIVE PROGRAMS** including Old Age Assistance, Public Welfare, Conservation, Health, care of Crippled Children, Blind persons and dependents, Free School Books and many other humanitarian measures.

## HOLLAND'S PROMISES

(And Holland Doesn't Break His Promises)

Include his promise to appoint to state boards, commissions and other state groups only men who are peculiarly fitted by experience and ability to hold the jobs to which they are appointed. He also promises not to appoint any members of his family to state jobs.

Holland promises sensible economy in those departments of state affairs coming under the jurisdiction of the Governor, thereby setting an example for other state departments to follow.

Holland promises to lend his every effort to bring about the development of a sound and equitable tax program.

He promises to develop and maintain a cordial feeling between the Governor's office and the Legislature which is essential if the public is to get the results and service they are entitled to.

He promises to represent all sections of the state in a fair and impartial manner.

Holland Is In Every Way Fitted  
To Be Governor!

# Elect Holland Governor

And Serve Your Own And The State's Best Interests